IN THE CLAIMS

Claim 1 has been amended as follows:

1. (Currently amended) A device for measuring an ionizing radiation dosage comprising:

a foil-like carrier; ~~and~~

a ionizing radiation absorption structure disposed on said foil-like carrier, said absorption structure comprising a plurality of thin-film layers disposed one above another, said layers comprising a layer embodying scintillator material and a layer forming at least one thin-film diode structure that supplies an output signal dependent on ionizing radiation incident on said absorption structure; and

said diode structure comprising two film electrodes and a photo-active semiconductor film layer disposed between said two film electrodes, and said scintillator is integrated into one of the film electrodes.

Claims 2-3 have been cancelled

2.- 3. (Cancelled)

Claim 4 has been amended as follows:

4. (Currently amended) A device as claimed in claim [[3]] 28 wherein said photo-active semiconductor film layer is comprised of at least one organic semiconductor functioning as a donor, and an additional material functioning as an acceptor.

Claim 5 has been amended as follows:

5. (Currently amended) A device as claimed in claim [[2]] 28 wherein said photo-active semiconductor film layer is comprised of two different semiconductors forming a heterojunction diode structure.

6. (Original) A device as claimed in claim 5 wherein said semiconductor film layer is formed by a first sub-layer comprised of a first of said two different semiconductors, and a second sub-layer comprised of a second of said two different semiconductors, said first and second sub-layers forming a heterojunction.

7. (Original) A device as claimed in claim 5 wherein said photo-active semiconductor film layer is comprised of a mixture of said two different semiconductors, forming a plurality of heterojunctions in said semiconductor film layer.

Claim 8 has been amended as follows:

8. (Currently amended) A device as claimed in claim [[3]] 28 wherein said photo-active semiconductor film layer is comprised of a p-doped first sub-layer and an n-doped second sub-layer, forming a pn-junction.

Claim 9 has been amended as follows:

9. (Original) A device as claimed in claim [[3]] 28 wherein said organic semiconductor material is selected from the group consisting of semiconducting conjugate polymers, derivatives of semiconducting conjugate polymers, low molecular weight semiconductors, and plastics selected from the group consisting of monomers, oligomers and polymers.

Claim 10 has been cancelled.

10. (Cancelled)

Claim 11 has been amended as follows:

11. (Currently amended) A device as claimed in claim [[1]] 28 wherein said foil-like carrier is comprised of a material selected from the group consisting of plastic and glass.

12. (Cancelled)

Claims 13, 14 and 15 have been cancelled.

13. - 15. (Cancelled) A device as claimed in claim 1 wherein said diode structure is comprised of two film electrodes and a photo-active semiconductor film layer disposed between said two film electrodes, and wherein said scintillator is applied to one of said film electrodes as a thin-film scintillator layer.

Claim 16 has been amended as follows:

16. (Currently amended) A device as claimed in claim 28 ~~1 wherein said diode structure comprises two film electrodes and a photo-active semiconductor film layer disposed between said two film electrodes, and~~ wherein said photo-active semiconductor film layer has a thickness of less than or equal to 1 μm.

17. (Cancelled)

Claim 18 has been amended as follows:

18. (Currently amended) A device as claimed in claim 28 ~~1 wherein said diode structure comprises two film electrodes and a photo-active semiconductor film layer disposed between said two film electrodes, and~~ wherein at least one of said film electrodes has a thickness of less than equal to 2 μm.

19. (Original) A device as claimed in claim 18 wherein at least one of said film electrodes has a thickness of less than or equal to 1 μm.

Claim 20 has been amended as follows:

20. (Currently amended) A device as claimed in claim 28 [[1]] wherein said absorption structure comprises a plurality of layers applied by an application technique selected from the group consisting of thermal vaporizations, cathode sputtering, solution centrifuging, and printing.

Claim 21 has been amended as follows:

21. (Currently amended) A device as claimed in claim 28 [[1]] wherein said absorption structure is a first absorption structure, and comprising a plurality of further absorption structures disposed in said foil-like carrier.

Claims 22-27 have cancelled.

22.-27. (Cancelled)

Claim 28 has been amended as follows:

28. (Currently amended) A device for measuring an ionizing radiation dosage comprising:

a foil-like carrier;

a ionizing radiation absorption structure disposed on said foil-like carrier, said absorption structure comprising a plurality of thin-film layers disposed one above another, said layers comprising a layer embodying scintillator material and a layer forming at least one ~~complete~~ completely organic thin-film diode structure that supplies an output signal dependent on ionizing radiation incident on said absorption structure ; and

said at least one completely organic thin film diode structure comprising two film electrodes, each consisting of a conductive polymer, and a photo-active semiconductor film layer, consisting of at least one organic semiconductor, disposed between said two film electrodes.